

2008 Report on Act 66. Section 21

**An Act Relating to Miscellaneous Changes to
Education Law: Statewide Network for
Distance Learning**

Recommendations to the General Assembly

January 1, 2008

Submitted by:



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Managed Statewide Network for Distance Learning

Through Section 21 of Act 66 of 2007, the Department of Education was charged with making “recommendations concerning a process by which the state could develop a statewide, managed network offering shared, high-quality distance-learning opportunities to all Vermont schools through accredited, online course offerings from nationally recognized distance learning schools and through Vermont-based distance learning courses. The department shall also consider ways in which such a network could be developed through collaboration within and among supervisory unions.”

Introduction

Vermont is a rural state, its citizens value small schools, and our students perform well by national standards. However, our educational system is being affected by a decline in enrollment, the fact that one-third of our students are not achieving our standards, additional professional development needs for teachers, and by the globalization of today’s marketplace. Many other states have looked to technology to support education, but Vermont’s existing infrastructure is fragmented, requiring schools to implement their own technology on limited networks. In doing so, each school or district must hire staff members to provide technical services including network administration, information systems and educational technology. Because all schools have the same requirements, the effort is duplicated many times over. Because the needs of the schools are so great and the resources so few, schools are not able to realize the full benefit of technology for supporting learning or school administration. A managed statewide network, that uses existing local networks as a base, could provide improved and equitably distributed network bandwidth and services while leveraging underutilized financial resources.

Estimating the Cost

The cost of establishing a managed network as described here is unknown at this time. In December 2007 the Department of Education (DOE) contracted with a vendor to improve Vermont schools’ use of the most basic E-Rate (federal reimbursement program for basic telecommunications services) benefits through a collaborative proposal submitted by the DOE. An analysis of potential E-Rate gains will be generated as a result of this contract. Additional research must determine the complete start-up costs, cost/benefit to schools of a managed network, and depth/breadth of impact of improved services. Staffing costs related to centralized E-Rate administration and implementation of the contract must be considered. In addition, savings from retiring the existing K12Net should also be considered and weighed in as a cost benefit. These savings will include the cost of bandwidth and K12Net management.

Goals of Project

1. Improve equity of distribution and improved cost effectiveness of broadband services to Vermont schools.
2. Provide a platform for growth of existing and new services
3. Maximize use of E-Rate funds.

Needs/Opportunities

1. *Equity of Opportunity*: Existing bandwidth inequities leave some schools with reasonably priced entry level broadband (Ex. T1 which is 25-30 times faster than dial-up) or better access, while others must pay higher rates for less bandwidth. A managed statewide network would significantly address this inequity by providing agreed upon minimal bandwidth (such as T1) to every school.

2. *Leveraging Financial Resources:* E-Rate support in Vermont is underutilized. In 2006, Vermont ranked 48th of 51 states/territories in per-student E-Rate benefit at \$45.76 per student. Alaska was highest at \$396.70.
3. *Economy of Scale:* Vermont's existing infrastructure is based on local school districts implementing their own technology on local networks that are becoming increasingly complex. Each school or district must hire staff members to provide technical services including network administration, information systems and educational technology. Because all schools have the same requirements, the effort is duplicated.
4. *Leveraging of State-supported Initiatives:* Existing initiatives such as the Education Data Warehouse (EDW), Learning Network of Vermont (LNV), and Riverdeep Learning Village will benefit from a managed network through Quality of Service improvements, and distribution of digital content in a more efficient and equitable way.
5. *Scaleable Platform for Growth and Development:* New opportunities such as distance learning and "Voice Over IP" can be made more equitably available to Vermont schools, and supported, through a statewide network.

Potential Scope of Services

A clear understanding of the scope of services provided via a Statewide Education Network is needed to evaluate the cost-benefit. The following items have been identified in the preliminary needs assessment for this project. It is possible that additional needs/opportunities will be identified as conversations with our school districts expand.

1. Central E-Rate Application
2. Quality of Service, assuring priority for videoconferencing (for example).
3. Compatibility with new versions of Internet Protocol, the fundamental operating system for the Internet
4. Central Management and improved reliability for school networks
5. Good customer support model (help desk & response time)
6. Shared services (Content filtering, Logon and Identity Management, Spam/Virus Control, network monitoring, security monitoring, firewall management)
7. Bundling of shared applications through a managed portal (Education Data Warehouse, Riverdeep Learning Village (Educator resource database) , Learning Network of Vermont (videoconferencing network), e-mail)
8. Broker agreements between telecommunications and other types of provider (must work with other state entities to ensure brokering agreements can be leveraged by others)
9. Provide schools "all inclusive cost" for bundled services
10. Provide a minimum bandwidth for schools at equitable cost no matter where the school is located (T1)
11. Scalable, which allows for increased uses over time
12. The network can be configured and managed for optimal performance using industry best practices (DNS caching, backbone management, etc)
13. Potential for Self-supporting Model (after initial state seed funding)
14. Ability to provide access to Internet2

Distance Learning

The creation of a state-supported distance learning program will bring about more equitable access to distance learning resources throughout Vermont, and will provide a foundation for local school districts to further develop and assume responsibility for distance learning offerings for students. Traditionally Vermont's schools have individually contracted with distance learning providers in order to offer students learning opportunities that might otherwise not be available. Therefore, the breadth, depth, quantity and quality of distance learning offerings for students have varied according to individual school priorities and available funding.

Vermont's vision for K-12 educational technology is for all our students, teachers and school leaders, our entire school communities, to be engaged with technologies that enhance student learning in a rich array of powerful ways. Educational technology is not about automating what has been done before. It centers, instead, on supporting new means of learning in our schools, and on opening up for our students the world of learning beyond school walls. With the tools of educational technology, our students can engage experts, educators, fellow students and others, across Vermont and around the world. They can gather and assess information, build new, 21st-century skills, join in meaningful work and open fresh realms of discovery.

Developing a system to meet the vision described above entails several technology initiatives such as the development of a managed statewide broadband network, access to Vermont-based distance learning resources as well as distance learning opportunities offered outside of the state, and implementation of a statewide educational portal.

A distance learning program should include local and national course offerings with diverse means of support, allowing Vermont schools to locally determine the most effective uses of distance learning. Resources expended on distance learning should leverage and be leveraged by existing efforts taking place throughout Vermont (ex. Vermont Council on Rural Development's broadband initiatives, Vermont Telecommunications Council).

Access to high-quality distance learning would be made available to Vermont students through:

1. Vermont-based distance learning courses and opportunities;
2. Accredited, online course offerings from nationally recognized distance learning schools;
3. Ongoing support for the existing videoconferencing network known as the Learning Network of Vermont (LNV);
4. A professional development program to improve the skills of Vermont educators in creating and effectively using distance learning tools and overseeing a local distance learning system.

Distance Learning Program Estimated Budget (DRAFT)

Item	Description	Year 1	Year 2	Year 3	Total
Program Coordinator	Staff position for all DL coordination, support and oversight (incl. LNV). Salary and benefits	\$62,400	\$64,272	\$66,200	\$192,872
Vermont-based Program:	Courses created and offered from inside VT				
Course development	24 Courses (12 year 1, 6 each years 2 & 3) @ \$3,000 per course	\$36,000	\$18,000	\$18,000	\$72,000
Instructor Salary	To teach online course as supplement to regular assignment @ \$4000 per course	\$36,000	\$54,000	\$72,000	\$144,000
Application software and servers	A “home” base for the Vermont system	\$12,000	\$2000	\$2000	\$16,000
Access to programs outside of Vermont	A competitive grant program supporting schools that integrate distance learning with their regular program				
Course Acquisition	Contract with a nationally accredited program offering a wide variety of coursework (i.e. Florida Virtual School, Virtual High School)	\$30,000	\$60,000	\$80,000	\$220,000
Local Mentoring	Face-to-face mentoring for students engaged in DL programs	\$48,000	\$96,000	\$120,000	\$288,000
Learning Network of Vermont	Videoconferencing network support				
LNV Contracts	Annual “head end” software, maintenance and broadband access costs	\$25,000	\$27,000	\$29,000	\$81,000
LNV Bridge replacement	Existing hardware will reach “end-of-life” in 2010			\$250,000	\$250,000
Professional Development and Evaluation	Program to improve educator skills and provide feedback				
Professional Development	Professional Development for instructors of DL courses, and teacher mentors on using DL	\$20,000	\$30,000	\$40,000	\$90,000
Program Evaluation	Formal study of the effectiveness of all programs providing recommendations for future direction	\$12,000	\$15,000	\$23,000	\$50,000
	Total	\$281,400	\$366,272	\$700,200	\$1,347,872